

## FATIGUE COOPERATION TREATMENT

PCT

**NOTIFICATION OF ELECTION**  
**(PCT Rule 61.2)**

## From the INTERNATIONAL BUREAU

To:

Assistant Commissioner for Patents  
United States Patent and Trademark  
Office  
Box PCT  
Washington, D.C.20231  
ETATS-UNIS D'AMERIQUE

in its capacity as elected Office

|  |  |
|--|--|
| <b>Date of mailing (day/month/year)</b><br>18 July 2000 (18.07.00)               | in its capacity as elected Office                                    |
| <b>International application No.</b><br>PCT/EP99/08591                           | <b>Applicant's or agent's file reference</b><br>8K22PC               |
| <b>International filing date (day/month/year)</b><br>09 November 1999 (09.11.99) | <b>Priority date (day/month/year)</b><br>10 November 1998 (10.11.98) |
| <b>Applicant</b>   |  |

**1. The designated Office is hereby notified of its election made:**

in the demand filed with the International Preliminary Examining Authority on:

06 June 2000 (06.06.00)

in a notice effecting later election filed with the International Bureau on:

2. The election  was

was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

|   |   |
|---|---|
| <p><b>The International Bureau of WIPO</b><br/> <b>34, chemin des Colombettes</b><br/> <b>1211 Geneva 20, Switzerland</b></p> <p>Facsimile No.: (41-22) 740.14.35</p> | <p><b>Authorized officer</b></p> <p><b>Zakaria EL KHODARY</b></p> <p>Telephone No.: (41-22) 338.83.38</p> |
|---|---|

From the  
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

To:

BORENIUS & CO OY AB  
Kansakoulukuja 3  
FI-00100 Helsinki  
FINLAND

PCT

NOTIFICATION OF TRANSMITTAL OF  
THE INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT

(PCT Rule 71.1)

|                                     |            |
|-------------------------------------|------------|
| Date of mailing<br>(day/month/year) | 20.09.2000 |
|-------------------------------------|------------|

|   |                               |  |
|---|-------------------------------|--|
| Applicant's or agent's file reference<br>8K22PC | <b>IMPORTANT NOTIFICATION</b> |  |
|---|-------------------------------|--|

|   |  |  |
|---|--|--|
| International application No.<br>PCT/EP99/08591 | International filing date (day/month/year)<br>09/11/1999 | Priority date (day/month/year)<br>10/11/1998 |
|---|--|--|

|  |
|--|
| Applicant<br>TELEFONAKTIEBOLAGET LM ERICSSON (publ) et al. |
|--|

1. The applicant is hereby notified that this International Preliminary Examining Authority transmits herewith the international preliminary examination report and its annexes, if any, established on the international application.
2. A copy of the report and its annexes, if any, is being transmitted to the International Bureau for communication to all the elected Offices.
3. Where required by any of the elected Offices, the International Bureau will prepare an English translation of the report (but not of any annexes) and will transmit such translation to those Offices.

#### 4. REMINDER

The applicant must enter the national phase before each elected Office by performing certain acts (filing translations and paying national fees) within 30 months from the priority date (or later in some Offices) (Article 39(1)) (see also the reminder sent by the International Bureau with Form PCT/IB/301).

Where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary examination report. It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned.

For further details on the applicable time limits and requirements of the elected Offices, see Volume II of the PCT Applicant's Guide.

|                                       |                    |
|---------------------------------------|--------------------|
| Name and mailing address of the IPEA/ | Authorized officer |
|---------------------------------------|--------------------|



European Patent Office  
D-80298 Munich  
Tel. +49 89 2399 - 0 Tx: 523656 epmu d  
Fax: +49 89 2399 - 4465

Authorized officer

Finnie, A

Tel. +49 89 2399-8251



# PATENT COOPERATION TREATY

## PCT

### INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

|   |  |   |
|---|--|---|
| Applicant's or agent's file reference<br>8K22PC   | <b>FOR FURTHER ACTION</b>                                | See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416) |
| International application No.<br>PCT/EP99/08591   | International filing date (day/month/year)<br>09/11/1999 | Priority date (day/month/year)<br>10/11/1998  |
| International Patent Classification (IPC) or national classification and IPC<br>H04Q3/00  |  |   |
| <b>Applicant</b><br><b>TELEFONAKTIEBOLAGET LM ERICSSON (publ) et al.</b>  |  |   |
| <p>1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 5 sheets, including this cover sheet.</p> <p><input type="checkbox"/> This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).</p> <p>These annexes consist of a total of sheets.</p>   |  |   |
| <p>3. This report contains indications relating to the following items:</p> <ul style="list-style-type: none"> <li>I    <input checked="" type="checkbox"/> Basis of the report</li> <li>II    <input type="checkbox"/> Priority</li> <li>III    <input type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</li> <li>IV    <input type="checkbox"/> Lack of unity of invention</li> <li>V    <input checked="" type="checkbox"/> Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</li> <li>VI    <input type="checkbox"/> Certain documents cited</li> <li>VII    <input checked="" type="checkbox"/> Certain defects in the international application</li> <li>VIII    <input type="checkbox"/> Certain observations on the international application</li> </ul> |  |   |

|   |  |
|---|--|
| Date of submission of the demand<br>06/06/2000  | Date of completion of this report<br>20.09.2000  |
| Name and mailing address of the international preliminary examining authority:<br>European Patent Office<br>D-80298 Munich<br>Tel. +49 89 2399 - 0 Tx: 523656 epmu d<br>Fax: +49 89 2399 - 4465 | Authorized officer<br><br><br>Kreppel, J.<br>Telephone No. +49 89 2399 8246 |



**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

International application No. PCT/EP99/08591

**I. Basis of the report**

1. This report has been drawn on the basis of (*substitute sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to the report since they do not contain amendments.*):

**Description, pages:**

1-10                   as originally filed

**Claims, No.:**

1-9                   as originally filed

**Drawings, sheets:**

1/2-2/2               as originally filed

2. The amendments have resulted in the cancellation of:

the description,      pages:  
 the claims,           Nos.:  
 the drawings,          sheets:

3.  This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

4. Additional observations, if necessary:

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

International application No. PCT/EP99/08591

**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

**1. Statement**

|                               |      |            |
|-------------------------------|------|------------|
| Novelty (N)                   | Yes: | Claims 1-9 |
|                               | No:  | Claims     |
| Inventive step (IS)           | Yes: | Claims 1-9 |
|                               | No:  | Claims     |
| Industrial applicability (IA) | Yes: | Claims 1-9 |
|                               | No:  | Claims     |

**2. Citations and explanations**

**see separate sheet**

**VII. Certain defects in the international application**

The following defects in the form or contents of the international application have been noted:

**see separate sheet**

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/EP99/08591

**With respect to item V:**

**1 Prior art**

The invention relates to a method of transferring signalling messages between an Internet Service Provider and an exchange of a telecommunications network according to claim 1 and a corresponding apparatus according to independent claim 9.

Providing telephone connections between circuit switched networks and data networks is known in the art. Signalling gateways are used to map message flows and protocol stacks between the different domains.

The European Telecommunications Standards Institute (ETSI) has recently established a project under the acronym TIPHON (Telecommunications and Internet Protocol Harmonization Over Network) to define voiceband communication between users connected to both circuit switched networks and IP based networks. Gateways are defined by TIPHON at the border between the networks mapping both signalling and voice channels.

Since access to the Internet is usually provided by different Service Providers (ISPs), a signalling gateway being under the control of a telecommunications Service Provider will be connected to different Internet Service Providers simultaneously. Signalling connections must therefore carefully be correlated to avoid accidental or fraudulent cross-ISP interference. This problem has not yet been addressed by the current TIPHON standards.

**2 Object**

It is therefore an object of the present invention to overcome the situation mentioned above and to provide a method and apparatus for transferring signalling messages between an ISP and an exchange avoiding cross-ISP interference of signalling connections.

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/EP99/08591

**3 Solution**

This is achieved via the following combination of features:

- messages are routed via a signalling gateway which provides conversion of messages between transmission protocols used within the telecommunication and the data network;
- for each message received from an ISP the right of that ISP to control a circuit switched communication channel identified in the message is confirmed.

The correlation of ISPs is done according to different embodiments of the invention by identifying the IP address of an ISP or by allocating each of the ISPs an unique Point Code of the telecommunications signalling network.

**4 Conclusions**

The inventive concept is neither anticipated nor rendered obvious by the prior art at hand. The subject-matter of independent **claims 1 and 9** therefore meets the requirements of Article 33 (2) and (3) PCT regarding novelty and inventive step. **Claims 2 to 8** are dependent on claim 1 and therefore also novel and inventive.

**With respect to item VII:**

The features of the claims are not provided with reference signs placed in parentheses (Rule 6.2(b) PCT).

The demand must be filed directly with the competent International Preliminary Examining Authority or, if two or more Authorities are competent, with the one chosen by the applicant. The full name or two-letter code of that Authority may be indicated by the applicant on the line below:  
IPEA/ EP

# PCT

## CHAPTER II

### DEMAND

under Article 31 of the Patent Cooperation Treaty:  
The undersigned requests that the international application specified below be the subject of international preliminary examination according to the Patent Cooperation Treaty and hereby elects all eligible States (except where otherwise indicated).

| For International Preliminary Examining Authority use only  |  |
|---|--|
| Identification of IPEA  | Date of receipt of DEMAND  |
| <b>Box No. I IDENTIFICATION OF THE INTERNATIONAL APPLICATION</b>  |  |
| International application No.<br>PCT/EP99/08591   | International filing date (day/month/year)<br>09 Nov 1999 (09.11.99) |
| (Earliest) Priority date (day/month/year)<br>10 Nov 1998 (10.11.98)   |  |
| Title of invention<br><b>SECURITY IN TELECOMMUNICATIONS NETWORK GATEWAYS</b>  |  |
| <b>Box No. II APPLICANT(S)</b>  |  |
| Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)<br><br>TELEFONAKTIEBOLAGET L M ERICSSON (publ)<br>S-126-25 Stockholm<br>Sweden | Telephone No.:<br><br>Facsimile No.:<br><br>Teleprinter No.:         |
| State (that is, country) of nationality:<br>SE  | State (that is, country) of residence:<br>SE                         |
| Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)<br><br>GRAF, Leslie<br>3 Hender Court, Ballwyn<br>VIC 3103<br>Australia        |  |
| State (that is, country) of nationality:<br>AU  | State (that is, country) of residence:<br>AU                         |
| Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)<br><br>RYTINA, Ian<br>28/25 Barkly Street, Carlton<br>VIC 3053<br>Australia    |  |
| State (that is, country) of nationality:<br>AU  | State (that is, country) of residence:<br>AU                         |
| <input checked="" type="checkbox"/> Further applicants are indicated on a continuation sheet.   |  |

## Continuation of Box No. II APPLICANT(S)

If none of the following sub-boxes is used, this sheet should not be included in the demand.

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)

HOLLIS, Mark  
1 Daintree Avenue  
Park Orchards  
VIC  
Australia

State (that is, country) of nationality:  
AU

State (that is, country) of residence:  
AU

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)

State (that is, country) of nationality:

State (that is, country) of residence:

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)

State (that is, country) of nationality:

State (that is, country) of residence:

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)

State (that is, country) of nationality:

State (that is, country) of residence:

Further applicants are indicated on another continuation sheet.

**Box No. III AGENT OR COMMON REPRESENTATIVE; OR ADDRESS FOR CORRESPONDENCE**

The following person is  agent  common representative

and  has been appointed earlier and represents the applicant(s) also for international preliminary examination.

is hereby appointed and any earlier appointment of (an) agent(s)/common representative is hereby revoked.

is hereby appointed, specifically for the procedure before the International Preliminary Examining Authority, in addition to the agent(s)/common representative appointed earlier.

Name and address: *(Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)*

Borenius & Co Oy Ab  
Kansakoulukuja 3  
FIN-00100 HELSINKI  
Finland

Telephone No.:

+358 9 686 6840

Facsimile No.:

+358 9 686 684 44

Teleprinter No.:

Address for correspondence: Mark this check-box where no agent or common representative is/has been appointed and the space above is used instead to indicate a special address to which correspondence should be sent.

**Box No. IV BASIS FOR INTERNATIONAL PRELIMINARY EXAMINATION****Statement concerning amendments:\***

1. The applicant wishes the international preliminary examination **to start on the basis of:**

the international application as originally filed

the description  as originally filed

as amended under Article 34

the claims  as originally filed

as amended under Article 19 (together with any accompanying statement)

as amended under Article 34

the drawings  as originally filed

as amended under Article 34

2.  The applicant wishes any amendment to the claims under Article 19 to be considered as reversed.

3.  The applicant wishes the start of the international preliminary examination **to be postponed** until the expiration of 20 months from the priority date unless the International Preliminary Examining Authority receives a copy of any amendments made under Article 19 or a notice from the applicant that he does not wish to make such amendments (Rule 69.1(d)). *(This check-box may be marked only where the time limit under Article 19 has not yet expired.)*

- \* Where no check-box is marked, international preliminary examination will start on the basis of the international application as originally filed or, where a copy of amendments to the claims under Article 19 and/or amendments of the international application under Article 34 are received by the International Preliminary Examining Authority before it has begun to draw up a written opinion or the international preliminary examination report, as so amended.

Language for the purposes of international preliminary examination: English.....

which is the language in which the international application was filed.

which is the language of a translation furnished for the purposes of international search.

which is the language of publication of the international application.

which is the language of the translation (to be) furnished for the purposes of international preliminary examination.

**Box No. V ELECTION OF STATES**

The applicant hereby elects all eligible States *(that is, all States which have been designated and which are bound by Chapter II of the PCT)*

excluding the following States which the applicant wishes not to elect:

**Box No. VI CHECK LIST**

The demand is accompanied by the following elements, in the language referred to in Box No. IV, for the purposes of international preliminary examination:

- |  |   |        |
|--|---|--------|
| 1. translation of international application                              | : | sheets |
| 2. amendments under Article 34   | : | sheets |
| 3. copy (or, where required, translation) of amendments under Article 19 | : | sheets |
| 4. copy (or, where required, translation) of statement under Article 19  | : | sheets |
| 5. letter  | : | sheets |
| 6. other (specify)   | : | sheets |

For International Preliminary Examining Authority use only

received      not received

|                          |                          |
|--------------------------|--------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> |

The demand is also accompanied by the item(s) marked below:

- |  |   |
|--|---|
| 1. <input checked="" type="checkbox"/> fee calculation sheet                             | 4. <input type="checkbox"/> statement explaining lack of signature                                  |
| 2. <input type="checkbox"/> separate signed power of attorney                            | 5. <input type="checkbox"/> nucleotide and or amino acid sequence listing in computer readable form |
| 3. <input type="checkbox"/> copy of general power of attorney; reference number, if any: | 6. <input type="checkbox"/> other (specify):  |

**Box No. VII SIGNATURE OF APPLICANT, AGENT OR COMMON REPRESENTATIVE**

Next to each signature, indicate the name of the person signing and the capacity in which the person signs (if such capacity is not obvious from reading the demand).

Borenius & Co Oy Ab

  
Silvio Hjelt  
European Patent Attorney (0081740)

**For International Preliminary Examining Authority use only**

1. Date of actual receipt of DEMAND:

2. Adjusted date of receipt of demand due to CORRECTIONS under Rule 60.1(b):

3.  The date of receipt of the demand is AFTER the expiration of 19 months from the priority date and item 4 or 5, below, does not apply.  The applicant has been informed accordingly.
4.  The date of receipt of the demand is WITHIN the period of 19 months from the priority date as extended by virtue of Rule 80.5.
5.  Although the date of receipt of the demand is after the expiration of 19 months from the priority date, the delay in arrival is EXCUSED pursuant to Rule 82.

**For International Bureau use only**

Demand received from IPEA on:

## PATENT COOPERATION TREATY

PCT

REC'D 22 SEP 2000

W IPO

PCT

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## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

|   |  |   |
|---|--|---|
| Applicant's or agent's file reference<br>8K22PC   | <b>FOR FURTHER ACTION</b>                                | See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416) |
| International application No.<br>PCT/EP99/08591   | International filing date (day/month/year)<br>09/11/1999 | Priority date (day/month/year)<br>10/11/1998  |
| International Patent Classification (IPC) or national classification and IPC<br>H04Q3/00  |  |   |
| Applicant<br>TELEFONAKTIEBOLAGET LM ERICSSON (publ) et al.  |  |   |
| <p>1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 5 sheets, including this cover sheet.</p> <p><input type="checkbox"/> This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).</p> <p>These annexes consist of a total of sheets.</p>   |  |   |
| <p>3. This report contains indications relating to the following items:</p> <ul style="list-style-type: none"> <li>I <input checked="" type="checkbox"/> Basis of the report</li> <li>II <input type="checkbox"/> Priority</li> <li>III <input type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</li> <li>IV <input type="checkbox"/> Lack of unity of invention</li> <li>V <input checked="" type="checkbox"/> Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</li> <li>VI <input type="checkbox"/> Certain documents cited</li> <li>VII <input checked="" type="checkbox"/> Certain defects in the international application</li> <li>VIII <input type="checkbox"/> Certain observations on the international application</li> </ul> |  |   |

|   |   |
|---|---|
| Date of submission of the demand<br>06/06/2000  | Date of completion of this report<br>20.09.2000   |
| Name and mailing address of the international preliminary examining authority:<br>European Patent Office<br>D-80298 Munich<br>Tel. +49 89 2399 - 0 Tx: 523656 epmu d<br>Fax: +49 89 2399 - 4465 | Authorized officer<br><br><br>Kreppel, J<br>Telephone No. +49 89 2399 8246 |

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

International application No. PCT/EP99/08591

**I. Basis of the report**

1. This report has been drawn on the basis of (*substitute sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to the report since they do not contain amendments.*):

**Description, pages:**

1-10                   as originally filed

**Claims, No.:**

1-9                   as originally filed

**Drawings, sheets:**

1/2-2/2               as originally filed

2. The amendments have resulted in the cancellation of:

the description,      pages:  
 the claims,           Nos.:  
 the drawings,         sheets:

3.  This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

4. Additional observations, if necessary:

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

International application No. PCT/EP99/08591

**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

**1. Statement**

|                               |      |            |
|-------------------------------|------|------------|
| Novelty (N)                   | Yes: | Claims 1-9 |
|                               | No:  | Claims     |
| Inventive step (IS)           | Yes: | Claims 1-9 |
|                               | No:  | Claims     |
| Industrial applicability (IA) | Yes: | Claims 1-9 |
|                               | No:  | Claims     |

**2. Citations and explanations**

**see separate sheet**

**VII. Certain defects in the international application**

The following defects in the form or contents of the international application have been noted:

**see separate sheet**

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/EP99/08591

**With respect to item V:**

**1 Prior art**

The invention relates to a method of transferring signalling messages between an Internet Service Provider and an exchange of a telecommunications network according to claim 1 and a corresponding apparatus according to independent claim 9.

Providing telephone connections between circuit switched networks and data networks is known in the art. Signalling gateways are used to map message flows and protocol stacks between the different domains.

The European Telecommunications Standards Institute (ETSI) has recently established a project under the acronym TIPHON (Telecommunications and Internet Protocol Harmonization Over Network) to define voiceband communication between users connected to both circuit switched networks and IP based networks. Gateways are defined by TIPHON at the border between the networks mapping both signalling and voice channels.

Since access to the Internet is usually provided by different Service Providers (ISPs), a signalling gateway being under the control of a telecommunications Service Provider will be connected to different Internet Service Providers simultaneously. Signalling connections must therefore carefully be correlated to avoid accidental or fraudulent cross-ISP interference. This problem has not yet been addressed by the current TIPHON standards.

**2 Object**

It is therefore an object of the present invention to overcome the situation mentioned above and to provide a method and apparatus for transferring signalling messages between an ISP and an exchange avoiding cross-ISP interference of signalling connections.

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/EP99/08591

**3 Solution**

This is achieved via the following combination of features:

- messages are routed via a signalling gateway which provides conversion of messages between transmission protocols used within the telecommunication and the data network;
- for each message received from an ISP the right of that ISP to control a circuit switched communication channel identified in the message is confirmed.

The correlation of ISPs is done according to different embodiments of the invention by identifying the IP address of an ISP or by allocating each of the ISPs an unique Point Code of the telecommunications signalling network.

**4 Conclusions**

The inventive concept is neither anticipated nor rendered obvious by the prior art at hand. The subject-matter of independent **claims 1 and 9** therefore meets the requirements of Article 33 (2) and (3) PCT regarding novelty and inventive step. **Claims 2 to 8** are dependent on claim 1 and therefore also novel and inventive.

**With respect to item VII:**

The features of the claims are not provided with reference signs placed in parentheses (Rule 6.2(b) PCT).

PATENT COOPERATION TREATY

**PCT**

**INTERNATIONAL SEARCH REPORT**

(PCT Article 18 and Rules 43 and 44)

|   |   |  |
|---|---|--|
| Applicant's or agent's file reference<br><b>8K22PC</b>            | <b>FOR FURTHER ACTION</b> see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below. |  |
| International application No.<br><b>PCT/EP 99/ 08591</b>          | International filing date (day/month/year)<br><b>09/11/1999</b>   | (Earliest) Priority Date (day/month/year)<br><b>10/11/1998</b> |
| Applicant<br><b>TELEFONAKTIEBOLAGET LM ERICSSON (publ) et al.</b> |   |  |

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 3 sheets.

It is also accompanied by a copy of each prior art document cited in this report.

**1. Basis of the report**

- a. With regard to the language, the international search was carried out on the basis of the International application in the language in which it was filed, unless otherwise indicated under this item.
  - the international search was carried out on the basis of a translation of the International application furnished to this Authority (Rule 23.1(b)).
- b. With regard to any nucleotide and/or amino acid sequence disclosed in the International application, the International search was carried out on the basis of the sequence listing :
  - contained in the International application in written form.
  - filed together with the International application in computer readable form.
  - furnished subsequently to this Authority in written form.
  - furnished subsequently to this Authority in computer readable form.
  - the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the International application as filed has been furnished.
  - the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

2.  Certain claims were found unsearchable (See Box I).

3.  Unity of invention is lacking (see Box II).

4. With regard to the title,

- the text is approved as submitted by the applicant.
- the text has been established by this Authority to read as follows:

**SECURITY IN TELECOMMUNICATIONS NETWORK GATEWAYS**

5. With regard to the abstract,

- the text is approved as submitted by the applicant.
- the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this International search report, submit comments to this Authority.

6. The figure of the drawings to be published with the abstract is Figure No.

- as suggested by the applicant.
- because the applicant failed to suggest a figure.
- because this figure better characterizes the invention.

1

None of the figures.

# INTERNATIONAL SEARCH REPORT

International Application No

PCT/EP 99/08591

**A. CLASSIFICATION OF SUBJECT MATTER**  
 IPC 7 H04Q3/00 H04L12/66

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 H04Q H04L

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

| Category ° | Citation of document, with indication, where appropriate, of the relevant passages   | Relevant to claim No. |
|------------|--|-----------------------|
| X          | WO 96 38018 A (TELEFONAKTIEBOLAGET LM ERICSSON) 28 November 1996 (1996-11-28)<br>abstract<br>page 1, line 24-36<br>page 5, line 11-35<br>page 7, line 19 -page 12, line 17<br>claims 1-7,11; figures 1,2 | 1-5,9                 |
| A          | —  | 6-8                   |
| X          | WO 98 17048 A (BRITISH TELECOMMUNICATIONS PLC) 23 April 1998 (1998-04-23)<br>abstract<br>page 4, line 1 -page 5, line 16<br>claims 1,2,10-12; figures 2-5,8<br>—   | 1,2,4,9<br>—/—        |

Further documents are listed in the continuation of box C.

Patent family members are listed in annex.

\* Special categories of cited documents :

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier document but published on or after the International filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
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"T" later document published after the International filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed Invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed Invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the International search

Date of mailing of the International search report

30 March 2000

10/04/2000

Name and mailing address of the ISA  
 European Patent Office, P.B. 5618 Patentlaan 2  
 NL - 2280 HV Rijswijk  
 Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,  
 Fax: (+31-70) 340-3016

Authorized officer

Gijssels, W

**INTERNATIONAL SEARCH REPORT**

International Application No

PCT/EP 99/08591

**C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT**

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|------------|---|-----------------------|
| A          | WO 98 28885 A (TELEFONAKTIEBOLAGET LM ERICSSON) 2 July 1998 (1998-07-02)<br>abstract<br>page 2, line 17-26<br>claims 1,7,8; figures 1,2<br>----                           | 1-9                   |
| A          | EP 0 851 653 A (LUCENT TECHNOLOGIES INC) 1 July 1998 (1998-07-01)<br>column 4, line 31 -column 5, line 21<br>claims 6-8; figures 1-7<br>----                              | 1,4,6,8,<br>9         |
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| E          | WO 99 67928 A (TELEFONAKTIEBOLAGET LM ERICSSON) 29 December 1999 (1999-12-29)<br>the whole document<br>----   | 1-4,6,7,<br>9         |
| E          | EP 0 966 145 A (NORTEL NETWORKS CORP) 22 December 1999 (1999-12-22)<br>abstract<br>claims 1-7; figures 1,3,5,6,22-25<br>----  | 1,3,4,9               |

**INTERNATIONAL SEARCH REPORT**

Information on patent family members

International Application No

PCT/EP 99/08591

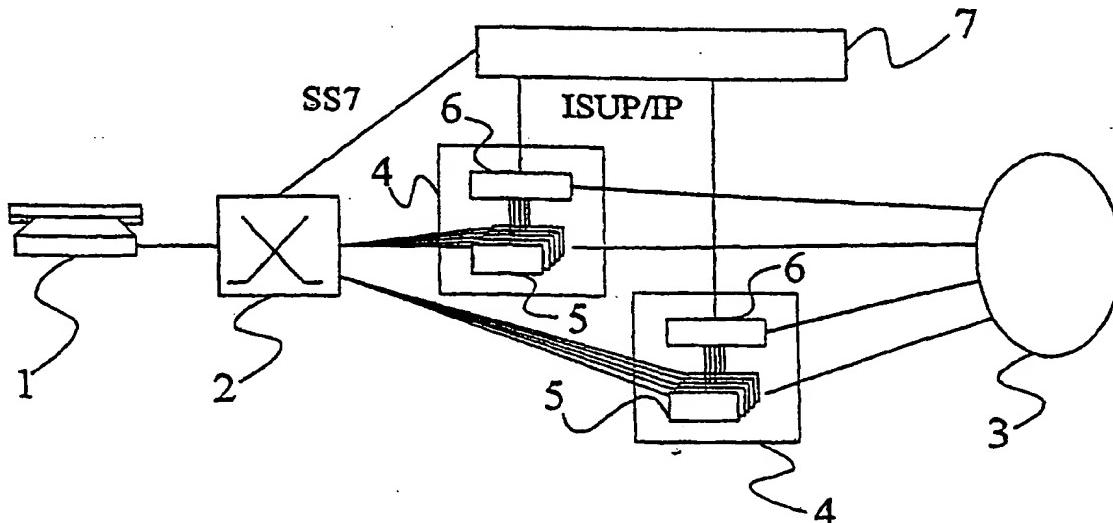
| Patent document cited in search report |   | Publication date |  | Patent family member(s)  |  | Publication date   |
|--|---|------------------|--|--|--|--|
| WO 9638018                             | A | 28-11-1996       |  | FI 961690 A<br>AU 708519 B<br>AU 5916696 A<br>BR 9609190 A<br>CA 2221183 A<br>CN 1185268 A<br>EP 0829181 A<br>JP 11505973 T<br>NO 975343 A |  | 25-11-1996<br>05-08-1999<br>11-12-1996<br>11-05-1999<br>28-11-1996<br>17-06-1998<br>18-03-1998<br>25-05-1999<br>21-01-1998 |
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| EP 0909064                             | A | 14-04-1999       |  | JP 11068851 A  |  | 09-03-1999   |
| WO 9967928                             | A | 29-12-1999       |  | FI 981354 A  |  | 12-12-1999   |
| EP 0966145                             | A | 22-12-1999       |  | NONE   |  |  |



## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

|   |    |  |
|---|----|--|
| (51) International Patent Classification <sup>7</sup> :<br><br>H04Q 3/00, H04L 12/66  | A1 | (11) International Publication Number: <b>WO 00/30369</b><br><br>(43) International Publication Date: 25 May 2000 (25.05.00)   |
| (21) International Application Number: PCT/EP99/08591   |    | (81) Designated States: AE, AL, AM, AT, AT (Utility model), AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, CZ (Utility model), DE, DE (Utility model), DK, DK (Utility model), DM, EE, EE (Utility model), ES, FI, FI (Utility model), GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SK (Utility model), SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG). |
| (22) International Filing Date: 9 November 1999 (09.11.99)  |    |  |
| (30) Priority Data:<br>982443 10 November 1998 (10.11.98) FI  |    |  |
| (71) Applicant ( <i>for all designated States except US</i> ): TELEFON-AKTIEBOLAGET LM ERICSSON (publ) [SE/SE]; S-126 25 Stockholm (SE).  |    |  |
| (72) Inventors; and   |    |  |
| (75) Inventors/Applicants ( <i>for US only</i> ): GRAF, Leslie [AU/AU]; 3 Hender Court, Ballwyn, VIC 3103 (AU); RYTINA, Ian [AU/AU]; 28/25 Barkly Street, Carlton, VIC (AU). HOLLISS, Mark [AU/AU]; 1 Daintree Avenue, Park Orchards, VIC (AU). |    |  |
| (74) Agent: BORENIUS & CO OY AB; Kansakoulukuja 3, FIN-00100 Helsinki (FI).   |    |  |

(54) Title: SECURITY IN TELECOMMUNICATIONS NETWORK GATEWAYS



## (57) Abstract

A method of transferring signalling messages between an Internet Service Provider (ISP) (4) and an exchange (2) of a telecommunications network for the purpose of allocating and controlling circuit switched communication channels between the exchange (2) and the ISP (4). The method comprising routing the signalling messages via an SS7/IP gateway which provides for conversion of messages between an SS7 protocol used in the telecommunications network and an IP based protocol used in the network which connects the SS7/IP gateway 7 to the ISP 4. For each message received at the SS7/IP gateway 7 from the ISP 4, the SS7/IP gateway 7 confirms the right of that ISP 4 to control a circuit switched communication channel identified in the message.

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## INTERNATIONAL SEARCH REPORT

Inten. Appl. No  
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|            | -/-  |                       |

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Name and mailing address of the ISA

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NL - 2280 HV Rijswijk  
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,  
Fax: (+31-70) 340-3016

Authorized officer

Gijssels, W

## INTERNATIONAL SEARCH REPORT

Int'l Application No  
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**INTERNATIONAL SEARCH REPORT**

Information on patent family members

Inten nal Application No

PCT/EP 99/08591

| Patent document cited in search report | Publication date | Patent family member(s)  |  | Publication date   |
|--|------------------|--|--|--|
| WO 9638018                             | A 28-11-1996     | FI 961690 A<br>AU 708519 B<br>AU 5916696 A<br>BR 9609190 A<br>CA 2221183 A<br>CN 1185268 A<br>EP 0829181 A<br>JP 11505973 T<br>NO 975343 A |  | 25-11-1996<br>05-08-1999<br>11-12-1996<br>11-05-1999<br>28-11-1996<br>17-06-1998<br>18-03-1998<br>25-05-1999<br>21-01-1998 |
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| EP 0966145                             | A 22-12-1999     | NONE   |  |  |

# PATENT COOPERATION TREATY

# PCT

## INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

|   |   |  |
|---|---|--|
| Applicant's or agent's file reference<br><b>8K22PC</b>            | <b>FOR FURTHER ACTION</b> see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below. |  |
| International application No.<br><b>PCT/EP 99/08591</b>           | International filing date (day/month/year)<br><b>09/11/1999</b>   | (Earliest) Priority Date (day/month/year)<br><b>10/11/1998</b> |
| Applicant<br><b>TELEFONAKTIEBOLAGET LM ERICSSON (publ) et al.</b> |   |  |

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 3 sheets.

It is also accompanied by a copy of each prior art document cited in this report.

**1. Basis of the report**

- a. With regard to the language, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

- the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).
- b. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international search was carried out on the basis of the sequence listing:
- contained in the international application in written form.
  - filed together with the international application in computer readable form.
  - furnished subsequently to this Authority in written form.
  - furnished subsequently to this Authority in computer readable form.
  - the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
  - the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

2.  Certain claims were found unsearchable (See Box I).

3.  Unity of invention is lacking (see Box II).

4. With regard to the title,

- the text is approved as submitted by the applicant.
- the text has been established by this Authority to read as follows:

**SECURITY IN TELECOMMUNICATIONS NETWORK GATEWAYS**

5. With regard to the abstract,

- the text is approved as submitted by the applicant.
- the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this International search report, submit comments to this Authority.

6. The figure of the drawings to be published with the abstract is Figure No.

- as suggested by the applicant.
- because the applicant failed to suggest a figure.
- because this figure better characterizes the invention.

1

None of the figures.

# INTERNATIONAL SEARCH REPORT

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10/04/2000

Name and mailing address of the ISA

European Patent Office, P.B. 5018 Patentlaan 2  
NL - 2280 HV Rijswijk  
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Gijsels, W

## INTERNATIONAL SEARCH REPORT

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| P,X      | WO 99 34613 A (BELL CANADA) 8 July 1999 (1999-07-08)<br>abstract<br>page 8, line 11 -page 14, line 19<br>claims 1,4-6,13-15; figures 1,2,5                        | 1-4,9                 |
| P,X      | EP 0 909 064 A (KOKUSAI DENSHIN DENWA CO LTD) 14 April 1999 (1999-04-14)<br>abstract<br>page 3, line 31 -page 4, line 52<br>figures 1A,1B,3                       | 1,2,4,9               |
| E        | WO 99 67928 A (TELEFONAKTIEBOLAGET LM ERICSSON) 29 December 1999 (1999-12-29)<br>the whole document   | 1-4,6,7,<br>9         |
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